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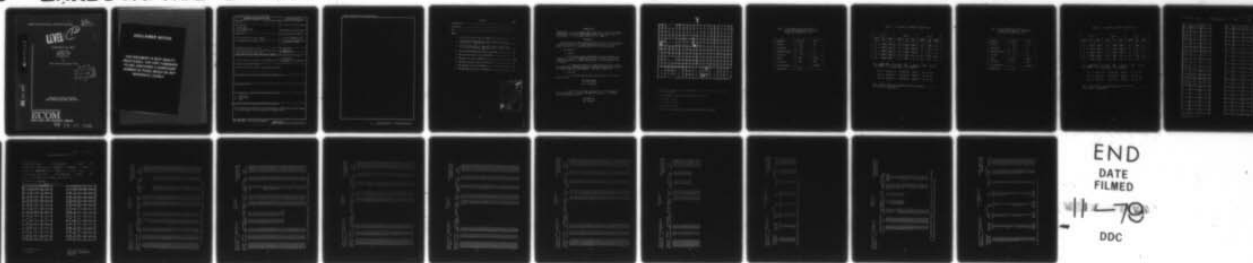
ARMY ELECTRONICS RESEARCH AND DEVELOPMENT COMMAND WS--ETC F/G 4/2
19304DT 6SRS MISSILE NUMBER 1030, ROUND NUMBER V-55, 12 JULY 19--ETC(U)
JUL 79

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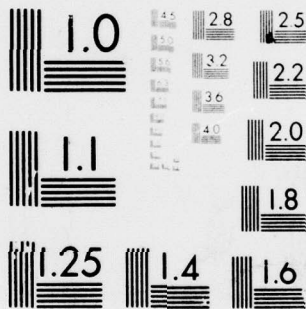
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DR 1044
July 1979

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LEVEL

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METEOROLOGICAL DATA REPORT

19304DT GSRS
Missile No. 1030
Round No. V-55
12 July 1979

by

White Sands Meteorological Team

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WHITE SANDS MISSILE RANGE, NEW MEXICO

ECOM

UNITED STATES ARMY ELECTRONICS COMMAND

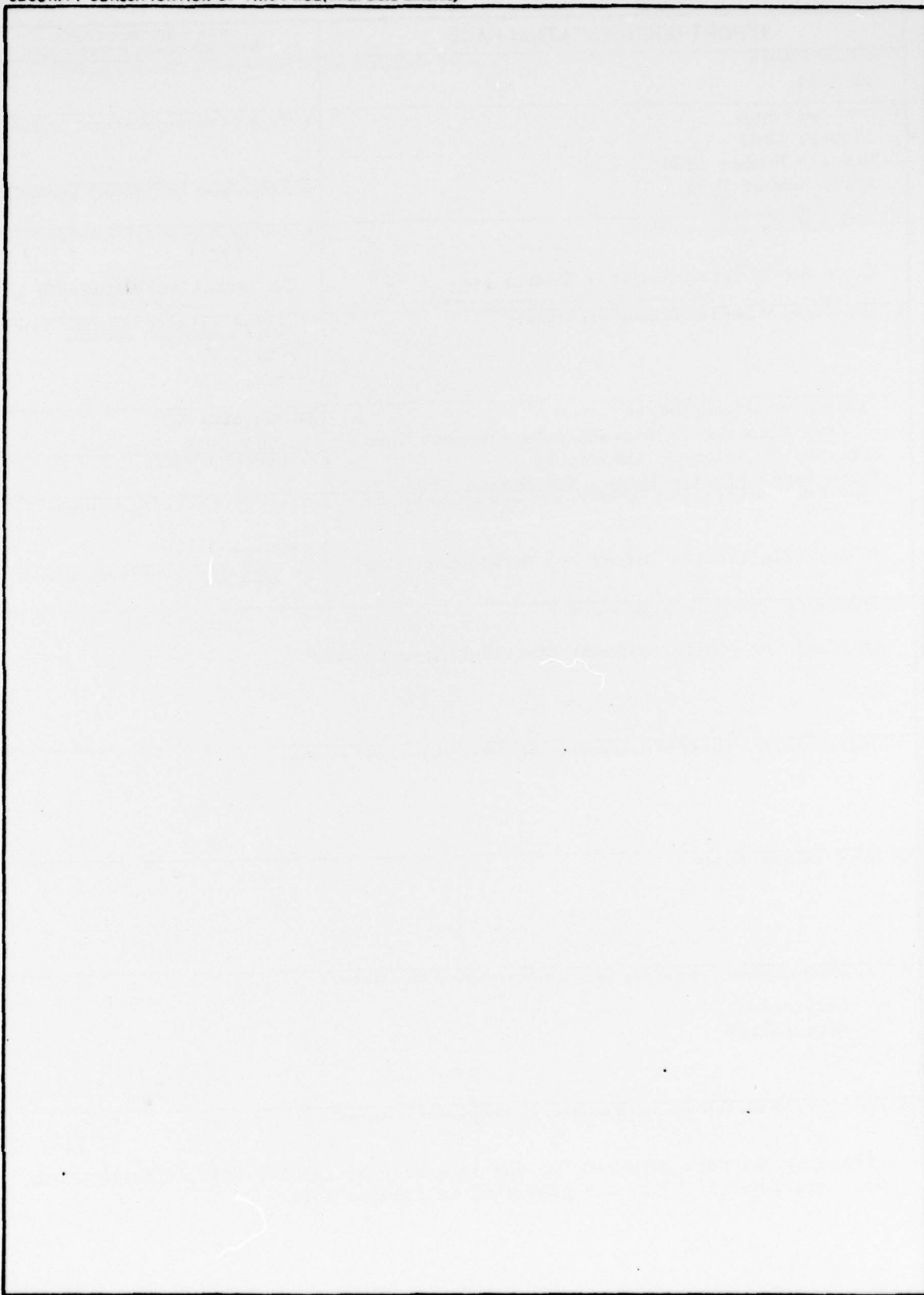
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1. REPORT NUMBER DR 1044	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) 19304DT GSRS Missile Number 1030 Round Number V-55 12 July 1979		5. TYPE OF REPORT & PERIOD COVERED
7. AUTHOR(s) White Sands Meteorological Team data rept.		6. PERFORMING ORG. REPORT NUMBER
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19. KEY WORDS (Continue on reverse side if necessary and identify by block number) 1. Ballistics 2. Meteorology 3. Wind		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) Meteorological data gathered for the launching of 19304DT GSRS, Missile Number 1030, Round Number V-55, are presented in tabular form.		

SECURITY CLASSIFICATION OF THIS PAGE(When Data Entered)



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INTRODUCTION

19304DT GSRS, Missile Number 1030, Round Number V-55, was launched from LC-33, White Sands Missile Range (WSMR), New Mexico, at 0830 MDT, 12 July 1979. The scheduled launch time was 0830 MDT.

DISCUSSION

Meteorological data were recorded and reduced by the White Sands Meteorological Team, Atmospheric Sciences Laboratory (ASL), White Sands Missile Range, New Mexico. The data were obtained by the following methods:

1. Observations

a. Surface

(1) Standard surface observations to include pressure, temperature ($^{\circ}\text{C}$), relative humidity, dew point ($^{\circ}\text{C}$), density (gm/m^3), wind direction and speed, and cloud cover were made at the LC-33 Met Site at T-0 minutes.

(2) Anemometer data were provided from existing pole-mounted and tower-mounted anemometers at LC-33. Monitor of wind speed and direction from one anemometer was also provided in the launch control room.

b. Upper Air

(1) Low level wind data were obtained from RAPTS T-9 pilot observation at:

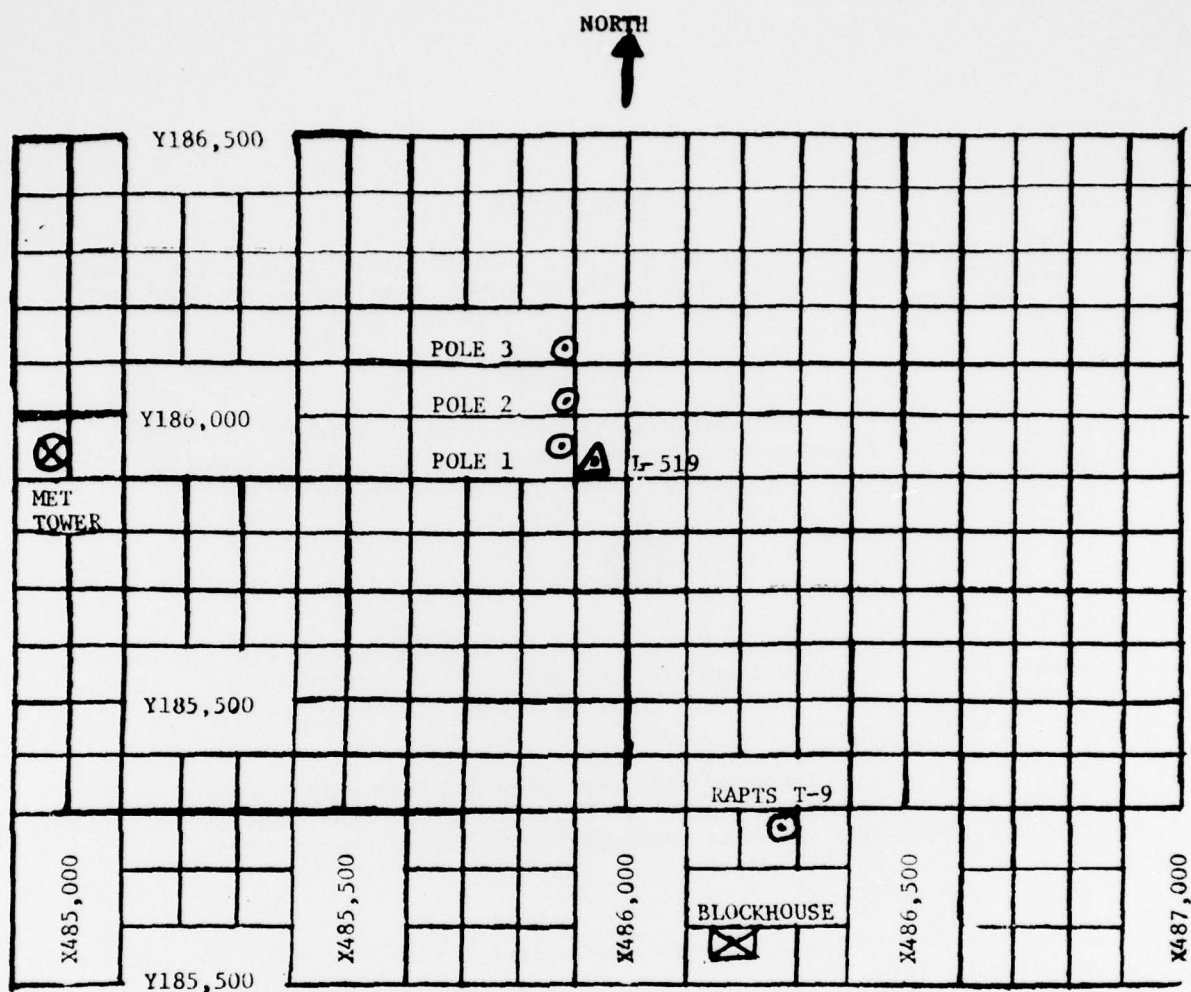
SITE AND ALTITUDE

LC-33 1200 Meters

(2) Air structure data (rawinsonde) were collected at the following Met Sites. Data were collected from surface to 112,000 feet in 500-foot increments.

SITE AND TIME

SMR 0730 MDT



1. MET TOWER - 4 Bendix Model T-20 Anemometers at 12 ft, 62 ft, 102 ft, and 202 ft with E/A recorders.
2. POLE ANEMOMETER - Bendix Model T-120 with E/A recorders.
 - (a) Pole #1 - 38.7 ft
 - (b) Pole #2 - 53.0 ft
 - (c) Pole #3 - 83.6 ft
3. RAPTS T-9 Radar Automatic Pilot-Balloon Tracking System T-9 Radar.

TABLE 1. Surface observations taken at LC-33
 12 July 1979 at 0830 MDT, 19304DT GSRS,
 Missile No. 1030, Round No. V-55.

ELEVATION	3977.30	FT/MSL
PRESSURE	875.9	MBS
TEMPERATURE	20.0	°C
RELATIVE HUMIDITY	34	%
DEW POINT	3.6	°C
DENSITY	1154	GM/M ³
WIND SPEED	CALM	MPH
WIND DIRECTION		DEGREES
CLOUD COVER	1 CS	

TABLE 2. LC-33 FIXED POLE ANEMOMETER-MEASURED WINDS

POLE #1			POLE #2			POLE #3		
T-TIME SEC	DIR DEG	SPEED MPH	T-TIME SEC	DIR DEG	SPEED MPH	T-TIME SEC	DIR DEG	SPEED MPH
-30	CALM	CALM	-30	CALM	CALM	-30	154	2.0
-20	CALM	CALM	-20	CALM	CALM	-20	147	3.0
-10	CALM	CALM	-10	CALM	CALM	-10	147	1.0
0.0	CALM	CALM	0.0	132	2.0	0.0	144	2.0
+10	CALM	CALM	+10	042	1.0	+10	112	3.0

Type 19304DT GSRS , Missile No. 1030 , Round No. V-55 launched
 from LC-33 on 12 July 1979 at 0830 MDT .

POLE #1 = X485,874.29 Y185,958.90 H4018.74 38.7 ft. AGL

POLE #2 = X485,874.93 Y186,012.00 H4033.57 53.0 ft. AGL

POLE #3 = X485,877.29 Y186,116.06 H4063.92 83.6 ft. AGL

NOTE: Wind directions are referenced to the firing azimuth _____
 or true north true north .

TABLE 1. Surface observations taken at LC-33
 12 July 1979 at 0830 MDT, 193040T GSRS,
 Missile No. 1030, Round No. V-55.

ELEVATION	3977.30	FT/MSL
PRESSURE	875.9	MBS
TEMPERATURE	20.0	°C
RELATIVE HUMIDITY	34	%
DEW POINT	3.6	°C
DENSITY	1154	GM/M ³
WIND SPEED	CALM	MPH
WIND DIRECTION		DEGREES
CLOUD COVER	1 CS	

TABLE 2. LC-33 FIXED POLE ANEMOMETER-MEASURED WINDS

POLE #1			POLE #2			POLE #3		
T-TIME SEC	DIR DEG	SPEED MPH	T-TIME SEC	DIR DEG	SPEED MPH	T-TIME SEC	DIR DEG	SPEED MPH
-30	CALM	CALM	-30	CALM	CALM	-30	154	2.0
-20	CALM	CALM	-20	CALM	CALM	-20	147	3.0
-10	CALM	CALM	-10	CALM	CALM	-10	147	1.0
0.0	CALM	CALM	0.0	132	2.0	0.0	144	2.0
+10	CALM	CALM	+10	042	1.0	+10	112	3.0

Type 19304DT GSRS, Missile No. 1030, Round No. V-55 launched
 from LC-33 on 12 July 1979 at 0830 MDT.

POLE #1 = X485,874.29 Y185,958.90 H4013.74 38.7 ft. AGL

POLE #2 = X485,874.93 Y186,012.00 H4033.57 53.0 ft. AGL

POLE #3 = X485,877.29 Y186,116.06 H4063.92 83.6 ft. AGL

NOTE: Wind directions are referenced to the firing azimuth _____
 or true north true north.

RELEASED FROM LC-33

DATE 12 July 1979

TIME 0830

MDT

HEIGHT AGL	DIRECTION DEGREES	SPEED MPH
780	227	4.0
810	211	5.0
840	195	6.0
870	191	6.5
900	186	6.5
930	181	6.5
960	176	6.5
990	178	7.0
1020	179	7.5
1050	180	8.0
1080	181	8.0
1110	187	8.5
1140	193	9.0
1170	199	9.5
1200	204	10

HEIGHT AGL	DIRECTION DEGREES	SPEED MPH

STATION ALTITUDE 3937.30 FEET MSL
12 JULY 79
ASCENSION NO. 235

SIGNIFICANT LEVEL DATA
1930060235
S M R

GEODETIC COORDINATES
32.48034 LAT DEG
106.42307 LON DEG

PRESSURE	GEOMETRIC ALTITUDE	TEMPERATURE AIR	DEWPOINT	REL. HUM.
MILLIBARS	MSL FEET	DEGREES	CENTIGRADE	PERCENT
875.0	3997.3	27.4	3.0	22.0
863.8	4368.5	23.6	1.3	23.0
850.0	4830.0	24.2	-9	19.0
794.2	6762.3	25.7	-1.2	17.0
700.0	10377.3	18.5	-7.0	16.0
626.0	13476.0	10.5	-12.1	19.0
532.2	17811.2	-2.6	-17.9	30.0
500.0	19425.2	-7.0	-22.8	27.0
400.0	25023.4	-18.8	-36.6	19.0
367.6	27074.1	-23.9	-32.2	46.0
357.7	27728.4	-25.4	-34.3	43.0
354.4	27949.5	-26.1	-33.2	51.0
338.0	29073.6	-28.2	-37.8	39.0
320.8	30299.4	-31.4	-37.4	55.0
309.8	31110.2	-33.0	-40.2	48.0
300.0	31852.0	-34.8	-41.9	48.0
262.6	34964.8	-42.4	-49.9	43.0
250.0	35953.7	-44.8		
200.0	40738.4	-57.1		
178.6	43068.7	-62.6		
165.4	44620.3	-65.1		
150.0	46585.6	-64.5		
141.6	47749.6	-63.9		
140.1	47966.0	-61.7		
120.0	51093.5	-65.7		
113.2	52269.4	-65.5		
103.4	54072.9	-68.6		
100.0	54736.6	-66.9		
70.0	61952.7	-60.9		
50.0	68942.0	-56.0		
38.8	74316.2	-52.5		
30.0	7927.3	-51.4		
22.8	85746.2	-49.8		
20.0	88611.5	-45.4		
16.8	92456.7	-46.1		
13.0	98140.7	-43.3		
10.0	104075.4	-37.0		
7.0	112332.5	-32.7		

TABLE 3. LC-33 METEOROLOGICAL TOWER ANEMOMETER-MEASURED WINDS (202 FT. TOWER)

LEVEL #1 12 ft.			LEVEL #2 62 ft.		
T-TIME SEC	DIR DEG	SPEED MPH	T-TIME SEC	DIR DEG	SPEED MPH
-30	CALM	CALM	-30	CALM	CALM
-20	CALM	CALM	-20	CALM	CALM
-10	CALM	CALM	-10	CALM	CALM
0.0	CALM	CALM	0.0	CALM	CALM
+10	CALM	CALM	+10	CALM	CALM
LEVEL #3 102 ft.			LEVEL #4 202 ft.		
T-TIME SEC	DIR DEG	SPEED MPH	T-TIME SEC	DIR DEG	SPEED MPH
-30	CALM	CALM	-30	CALM	CALM
-20	CALM	CALM	-20	CALM	CALM
-10	CALM	CALM	-10	CALM	CALM
0.0	CALM	CALM	0.0	CALM	CALM
+10	CALM	CALM	+10	CALM	CALM

WTSM Coordinates: X484,982.64 Y185,957.73 H3983.00 (base)

Type 19304DT GSRS , Missile No. 1030 , Round No. V-55 launched
from LC-33 on 12 July 1979 at 0830 MDT.

NOTE: Wind directions are referenced to the firing azimuth _____
or true north true north.

PILOT BALLOON MEASURED WIND DATA*

TABLE 4

RELEASED FROM LC-33 DATE 12 July 1979 TIME 0830 MDT

RELEASE POINT COORDINATES (WSTM) X=486,037.24 Y=182,350.16 H= 3977.30

MISSILE TYPE 19304DT GSRS MISSILE NO. 1030 ROUND NO. V-55

MISSILE LAUNCHED FROM LC-33 DATE 12 July 1979 TIME 0830 MDT

NOTE: WIND DIRECTIONS ARE REFERENCED TO THE FIRING AZIMUTH

OR TRUE NORTH true north

Heights are METERS AGL METERS or FEET AGL

HEIGHT AGL	DIRECTION DEGREES	SPEED MPH
SFC	CALM	CALM
30	021	0.5
60	042	0.5
90	063	1.0
120	083	1.0
150	066	3.0
180	048	4.5
210	031	6.0
240	013	7.5
270	013	6.0
300	012	4.5
330	011	3.0
360	010	1.5

HEIGHT AGL	DIRECTION DEGREES	SPEED MPH
390	011	6.5
420	009	5.5
450	007	4.5
480	005	3.5
510	049	3.0
540	093	2.0
570	137	1.5
600	180	0.5
630	200	1.0
660	220	1.5
690	240	2.0
720	259	2.0
750	243	3.0

DELAS-MS-MT-WS Form 46

1 Sept 1979

Replaces DELAS-MS-MT-WS
forms 46-A & 46-B and all
other Pibal forms which are
obsolete.

STATION ALTITUDE 3997.30 FEET MSL
12 JULY 79 0730 HRS MST
ASCENSION NO. 235

UPPER AIR DATA
1930060235
S M R

GEODETIC COORDINATES
32.48034 LAT DEG
106.42307 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	SPEED KNOTS	INDEX OF REFRACTION
3997.3	875.0	27.4	22.0	1010.7	670.6	60.0	7.0	1.000259
4000.0	874.9	27.4	22.0	1010.7	670.5			1.000259
4500.0	859.8	23.8	21.9	1006.0	672.2			1.000252
5000.0	845.0	24.3	18.8	987.0	672.8			1.000244
5500.0	830.4	24.7	18.3	968.7	673.2			1.000240
6000.0	810.1	25.1	17.3	950.7	673.7			1.000236
6500.0	802.0	25.5	17.3	933.1	674.1			1.000232
7000.0	788.2	25.3	16.9	917.7	673.9			1.000228
7500.0	774.4	24.3	16.8	904.9	672.7			1.000223
8000.0	761.0	23.3	15.7	892.2	671.5			1.000219
8500.0	747.7	22.3	16.5	879.8	670.3			1.000215
9000.0	734.7	21.3	16.4	867.5	669.2			1.000211
9500.0	721.9	20.3	16.2	853.4	668.0			1.000208
10000.0	709.3	19.3	16.1	843.5	666.8			1.000204
10500.0	696.9	18.2	16.1	831.8	665.0			1.000200
11000.0	684.5	16.9	16.6	820.6	664.1			1.000197
11500.0	672.2	15.6	17.1	809.0	662.6			1.000194
12000.0	660.2	14.3	17.6	796.8	661.1			1.000191
12500.0	648.4	13.0	18.1	788.1	659.5			1.000188
13000.0	636.8	11.7	18.5	777.6	658.0			1.000185
13500.0	625.4	10.4	19.1	767.2	656.5			1.000182
14000.0	613.8	8.9	20.3	757.1	654.7			1.000180
14500.0	602.5	7.4	21.6	747.1	652.9			1.000177
15000.0	591.3	5.8	22.9	737.4	651.1			1.000175
15500.0	580.3	4.3	24.1	727.7	649.3			1.000172
16000.0	569.5	2.8	25.4	716.2	647.5			1.000169
16500.0	559.0	1.2	26.7	703.9	645.7			1.000167
17000.0	548.6	-3	27.9	690.7	643.9			1.000164
17500.0	538.4	-1.8	29.2	690.6	642.0			1.000162
18000.0	528.3	-3.3	29.6	681.3	640.3			1.000159
18500.0	518.2	-4.6	28.7	671.6	638.7			1.000156
19000.0	508.3	-5.9	27.8	662.0	637.1			1.000153
19500.0	498.5	-7.2	26.9	652.4	635.6			1.000150
20000.0	488.7	-8.2	26.2	642.1	634.3			1.000148
20500.0	479.0	-9.3	25.5	632.0	633.0			1.000145
21000.0	469.6	-10.3	24.7	622.1	631.6			1.000142
21500.0	460.3	-11.4	24.0	612.3	630.5			1.000140
22000.0	451.2	-12.4	23.3	602.6	629.2			1.000137
22500.0	442.3	-13.5	22.6	593.2	627.9			1.000135
23000.0	433.6	-14.5	21.9	583.9	626.6			1.000133

XX WIND DATA INVALID DUE TO MISSING RAW AZIMUTH AND ELEVATION ANGLES.

STATION ALTITUDE 397.30 FEET MSL
 12 JULY 79
 ASCENSION NO. 235

UPPER AIR DATA
 1930060235
 S M R

GEODETIC COORDINATES
 32.48034 LAT DEG
 106.42307 LONG DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (T)	SPEED KNOTS	INDEX OF REFRACTION
23500.0	425.0	-15.6	21.2	574.7	625.3	354.4	16.2	1.000130
24000.0	416.7	-16.6	20.5	565.7	624.0	358.1	18.7	1.000128
24500.0	408.4	-17.7	19.7	556.8	622.7	1.8	20.5	1.000126
25000.0	400.4	-18.8	19.0	548.1	621.5	4.3	22.0	1.000124
25500.0	392.2	-20.0	25.3	539.6	620.0	4.9	22.6	1.000122
26000.0	384.2	-21.2	31.9	531.1	618.4	5.2	23.0	1.000120
26500.0	376.4	-22.5	38.4	522.9	616.9	4.7	22.9	1.000119
27000.0	368.7	-23.7	45.0	514.6	615.4	4.0	22.9	1.000117
27500.0	361.1	-24.9	44.0	506.5	614.0	3.0	23.5	1.000115
28000.0	353.6	-26.2	50.5	498.7	612.3	1.5	24.3	1.000113
28500.0	346.3	-27.1	45.1	490.2	611.2	358.2	25.6	1.000111
29000.0	339.0	-28.1	39.8	481.8	610.0	355.3	26.3	1.000109
29500.0	331.9	-29.3	44.6	474.1	608.4	352.9	25.5	1.000107
30000.0	324.9	-30.6	51.1	466.6	606.8	351.4	24.8	1.000105
30500.0	318.0	-31.8	53.3	458.9	605.3	350.9	24.1	1.000104
31000.0	311.3	-32.8	49.0	451.0	604.1	350.2	24.0	1.000102
31500.0	304.6	-33.9	41.1	443.5	602.6	349.3	24.1	1.000100
32000.0	298.0	-35.2	47.8	436.2	601.0	348.7	24.0	1.000098
32500.0	291.5	-36.4	46.9	429.0	599.4	348.2	23.8	1.000096
33000.0	285.2	-37.7	45.0	421.8	597.8	351.0	23.6	1.000095
33500.0	278.9	-39.0	45.3	414.9	596.2	354.3	23.5	1.000093
34000.0	272.8	-40.2	44.4	408.0	594.6	358.4	23.6	1.000091
34500.0	266.9	-41.5	43.6	401.3	593.0	2.4	23.8	1.000090
35000.0	261.0	-42.7	37.7**	394.5	591.4	4.6	24.0	1.000088
35500.0	255.2	-43.8	17.9**	387.6	590.0	6.6	24.2	1.000086
36000.0	249.5	-44.9		380.8	588.5	5.4	24.6	1.000085
36500.0	243.7	-46.2		374.1	586.9	3.9	25.2	1.000083
37000.0	238.1	-47.5		367.6	585.2	1.3	27.6	1.000082
37500.0	232.6	-48.8		361.1	583.6	359.7	29.9	1.000080
38000.0	227.2	-50.1		354.9	581.9	.2	31.1	1.000079
38500.0	222.0	-51.3		348.7	580.2	1.1	32.1	1.000078
39000.0	216.9	-52.6		342.6	578.5	4.1	31.3	1.000076
39500.0	211.9	-53.9		336.7	576.8	7.3	30.6	1.000075
40000.0	207.0	-55.2		330.9	575.1	9.7	30.5	1.000074
40500.0	202.2	-56.5		325.2	573.4	12.0	30.5	1.000072
41000.0	197.5	-57.7		319.3	571.6	12.6	31.0	1.000071
41500.0	192.7	-58.9		313.4	570.2	12.8	31.6	1.000070
42000.0	188.1	-60.1		307.6	568.7	15.1	31.3	1.000069
42500.0	183.6	-61.3		301.9	567.1	18.4	30.7	1.000067
43000.0	179.2	-62.4		296.3	565.3	21.4	29.4	1.000066

** AT LAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 3997.30 FEET MSL
12 JULY 79 0730 HRS MST
ASCENSION NO. 235

UPPER AIR DATA
1930000205
S M R

GEOMETRIC ALTITUDE
MSL FEET

PRESSURE
MILLIBARS

TEMPERATURE
AIR DEGREES

REL. HUM.
PERCENT

DENSITY
GM/CUBIC
METER

SPEED OF
SOUND
KNOTS

WIND DATA
DIRECTION
DEGREES (TN)

INDEX
OF
REFRACTION

43500.0	174.8	-63.3	290.2	564.4	24.4	27.6	1.000065
44000.0	170.6	-64.1	284.2	563.3	26.9	26.1	1.000063
44500.0	166.4	-64.9	278.3	562.2	28.6	24.9	1.000062
45000.0	162.3	-65.0	271.6	562.1	29.4	22.4	1.000060
45500.0	158.3	-64.8	264.8	562.3	28.1	18.0	1.000059
46000.0	154.4	-64.7	258.1	562.5	23.3	13.8	1.000057
46500.0	150.6	-64.5	251.6	562.7	5.7	10.3	1.000056
47000.0	147.0	-64.3	245.1	563.0	343.0	8.8	1.000055
47500.0	143.4	-64.0	238.8	563.4	343.1	9.5	1.000053
48000.0	139.9	-61.7	230.5	560.4	344.0	10.1	1.000051
48500.0	136.3	-62.4	225.5	565.0	359.0	8.7	1.000050
49000.0	133.1	-63.0	220.7	564.7	18.0	8.1	1.000049
49500.0	129.9	-63.7	216.0	563.9	37.8	6.6	1.000048
50000.0	126.7	-64.3	211.3	563.0	63.0	5.9	1.000047
50500.0	123.6	-64.9	206.8	562.1	80.4	5.7	1.000046
51000.0	120.6	-65.6	202.4	561.3	105.1	5.7	1.000045
51500.0	117.6	-65.6	197.5	561.2	117.6	5.6	1.000044
52000.0	114.7	-65.5	192.5	561.3	120.0	4.3	1.000043
52500.0	111.9	-65.9	186.1	560.9	124.9	2.9	1.000042
53000.0	109.1	-66.8	184.2	559.7	163.0	1.1	1.000041
53500.0	106.4	-67.6	180.4	558.3	254.1	1.9	1.000040
54000.0	103.8	-68.5	176.6	557.4	232.1	1.2	1.000039
54500.0	101.2	-67.5	171.4	556.7	132.7	2.3	1.000038
55000.0	98.7	-66.7	166.5	559.8	117.0	4.7	1.000037
55500.0	96.3	-66.3	162.1	560.4	110.6	7.1	1.000036
56000.0	93.9	-65.8	157.9	560.9	107.1	9.3	1.000035
56500.0	91.7	-65.4	153.7	561.5	100.6	9.9	1.000034
57000.0	89.4	-65.0	149.7	562.0	93.3	10.6	1.000033
57500.0	87.2	-64.6	145.7	562.6	100.0	12.9	1.000032
58000.0	85.1	-64.2	141.9	563.2	105.1	15.9	1.000032
58500.0	83.0	-63.8	138.1	563.7	111.5	18.4	1.000031
59000.0	81.0	-63.4	134.5	564.3	120.7	20.4	1.000030
59500.0	79.0	-62.9	131.0	564.8	127.9	22.8	1.000029
60000.0	77.1	-62.5	127.5	565.4	131.2	22.6	1.000028
60500.0	75.2	-62.1	124.1	566.0	134.5	22.5	1.000027
61000.0	73.4	-61.7	120.9	566.5	134.6	20.7	1.000027
61500.0	71.6	-61.3	117.7	567.1	132.6	18.0	1.000026
62000.0	69.8	-60.9	114.6	567.6	128.1	15.4	1.000026
62500.0	68.2	-60.5	111.7	568.1	115.5	13.0	1.000025
63000.0	66.6	-60.2	108.9	568.6	98.7	11.5	1.000024

STATION ALTITUDE 3997.30 FEET MSL
12 JULY 79
ASCENSION NO. 235

UPPER AIR DATA
1930060235
S M R

GEODETIC COORDINATES
32.48034 LAT DEG
106.42307 LONG DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	TEMPERATURE DEWPOINT DEGREES	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (T.M.)	SPEED KNOTS	INDEX OF REFRACTION
63500.0	65.0	-59.8			106.1	569.0	93.4	13.2	1.000024
64000.0	63.4	-59.5			103.4	569.5	91.6	15.5	1.000023
64500.0	61.9	-59.1			100.8	570.0	91.6	17.3	1.000022
65000.0	60.4	-58.8			98.2	570.4	94.7	18.4	1.000022
65500.0	59.0	-58.4			95.7	570.9	97.3	19.5	1.000021
66000.0	57.6	-58.1			93.3	571.4	97.1	19.9	1.000021
66500.0	56.2	-57.7			90.9	571.8	96.7	20.2	1.000020
67000.0	54.9	-57.4			88.6	572.3	96.5	20.6	1.000020
67500.0	53.6	-57.0			86.4	572.7	96.9	21.2	1.000019
68000.0	52.3	-56.7			84.2	573.2	97.2	21.8	1.000019
68500.0	51.1	-56.3			82.1	573.7	98.4	21.7	1.000018
69000.0	49.9	-56.0			80.0	574.1	99.6	21.6	1.000018
69500.0	48.7	-55.6			78.0	574.6	100.4	21.7	1.000017
70000.0	47.6	-55.3			76.1	575.0	100.7	22.1	1.000017
70500.0	46.5	-55.0			74.2	575.4	100.9	22.5	1.000017
71000.0	45.4	-54.7			72.3	575.9	101.3	22.8	1.000016
71500.0	44.3	-54.3			70.6	576.3	101.9	23.0	1.000016
72000.0	43.3	-54.0			68.8	576.7	102.3	23.4	1.000015
72500.0	42.3	-53.7			67.1	577.1	101.0	24.0	1.000015
73000.0	41.3	-53.4			65.4	577.6	99.8	24.7	1.000015
73500.0	40.3	-53.0			63.8	578.0	98.8	25.8	1.000014
74000.0	39.4	-52.7			62.2	578.4	92.4	27.5	1.000014
74500.0	38.5	-52.5			60.7	578.7	88.5	29.4	1.000014
75000.0	37.6	-52.4			59.3	578.9	87.4	30.7	1.000013
75500.0	36.7	-52.3			57.9	579.0	87.0	31.8	1.000013
76000.0	35.9	-52.2			56.5	579.1	86.7	32.9	1.000013
76500.0	35.0	-52.1			55.2	579.3	88.5	33.6	1.000012
77000.0	34.2	-52.0			53.9	579.4	90.3	34.3	1.000012
77500.0	33.4	-51.9			52.6	579.5	91.6	34.8	1.000012
78000.0	32.7	-51.8			51.4	579.7	90.3	33.8	1.000011
78500.0	31.9	-51.7			50.2	579.8	89.0	32.8	1.000011
79000.0	31.2	-51.6			49.0	579.9	87.8	31.9	1.000011
79500.0	30.5	-51.5			47.9	580.0	86.9	31.3	1.000011
80000.0	29.8	-51.4			46.7	580.2	86.1	30.7	1.000010
80500.0	29.1	-51.2			45.6	580.4	86.1	30.8	1.000010
81000.0	28.4	-51.1			44.6	580.5	87.2	31.8	1.000010
81500.0	27.8	-50.9			43.5	580.7	88.2	32.7	1.000010
82000.0	27.1	-50.8			42.5	580.9	88.6	33.4	1.000009
82500.0	26.5	-50.7			41.5	581.1	88.7	33.9	1.000009
83000.0	25.9	-50.5			40.5	581.3	88.7	34.4	1.000009

STATION ALTITUDE 397.30 FEET MSL
12 JULY 79 0730 HRS MST
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UPPER AIR DATA
1930060235
S M R

GEODETIC COORDINATES
32.48034 LAT DEG
106.42307 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	INDEX OF REFRACTION
83500.0	25.3	-50.4		39.6	581.4	88.9	1.000009
84000.0	24.7	-50.3		38.6	581.6	89.1	1.000009
84500.0	24.2	-50.1		37.7	581.8	89.4	1.000008
85000.0	23.6	-50.0		36.8	582.0	89.6	1.000008
85500.0	23.1	-49.9		36.0	582.1	89.7	1.000008
86000.0	22.5	-49.4		35.1	582.7	89.8	1.000008
86500.0	22.0	-48.6		34.2	583.7	89.8	1.000008
87000.0	21.5	-47.9		33.3	584.7	89.2	1.000007
87500.0	21.0	-47.1		32.4	585.7	88.5	1.000007
88000.0	20.6	-46.3		31.6	586.7	87.9	1.000007
88500.0	20.1	-45.6		30.8	587.7	87.4	1.000007
89000.0	19.7	-45.5		30.1	587.8	86.8	1.000007
89500.0	19.2	-45.6		29.4	587.7	86.3	1.000007
90000.0	18.8	-45.7		28.8	587.6	85.5	1.000006
90500.0	18.4	-45.7		28.1	587.5	84.5	1.000006
91000.0	17.9	-45.8		27.5	587.4	83.5	1.000006
91500.0	17.5	-45.9		26.9	587.2	82.7	1.000006
92000.0	17.2	-46.0		26.3	587.1	82.1	1.000006
92500.0	16.8	-46.1		25.7	587.1	81.5	1.000006
93000.0	16.4	-45.8		25.1	587.4	81.0	1.000006
93500.0	16.0	-45.6		24.5	587.7	80.7	1.000005
94000.0	15.7	-45.3		24.0	588.0	80.5	1.000005
94500.0	15.3	-45.1		23.4	588.3	80.3	1.000005
95000.0	15.0	-44.8		22.9	588.6	80.6	1.000005
95500.0	14.6	-44.6		22.3	589.0	81.0	1.000005
96000.0	14.3	-44.4		21.8	589.3	81.4	1.000005
96500.0	14.0	-44.1		21.3	589.6	81.5	1.000005
97000.0	13.7	-43.9		20.8	589.9	81.4	1.000005
97500.0	13.4	-43.6		20.3	590.2	81.5	1.000005
98000.0	13.1	-43.4		19.8	590.5	81.2	1.000004
98500.0	12.8	-42.9		19.4	591.1	82.5	1.000004
99000.0	12.5	-42.4		18.9	591.8	83.0	1.000004
99500.0	12.2	-41.9		18.4	592.5	85.1	1.000004
100000.0	12.0	-41.3		18.0	593.2	88.6	1.000004
100500.0	11.7	-40.8		17.6	593.8	89.5	1.000004
101000.0	11.5	-40.3		17.1	594.5	90.4	1.000004
101500.0	11.2	-39.7		16.7	595.2	92.5	1.000004
102000.0	11.0	-39.2		16.3	595.9	92.7	1.000004
102500.0	10.7	-38.7		15.9	596.5	91.9	1.000004
103000.0	10.5	-38.1		15.5	597.2	91.1	1.000003

STATION ALTITUDE 997.30 FEET MSL
 12 JULY 79
 ASCENSION NO. 235

UPPER AIR DATA
 1930060235
 S M R

GEODETIC COORDINATES
 32.48034 LAT DEG
 106.42307 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	TEMPERATURE DEWPOINT DEGREES	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (T)	SPEED KNOTS	INDEX OF REFRACTION
10350.0	10.3	-37.6			15.2	597.9	90.9	55.2	1.000003
10400.0	10.0	-37.1			14.6	598.9	89.6	56.1	1.000003
10450.0	9.8	-36.8			14.5	599.0	89.4	57.0	1.000003
10500.0	9.6	-36.5			14.1	599.3	88.9	57.9	1.000003
10550.0	9.4	-36.3			13.8	599.9	88.5	58.8	1.000003
10600.0	9.2	-36.0			13.5	599.9	88.9	60.2	1.000003
10650.0	9.0	-35.7			13.2	600.3	89.2	61.7	1.000003
10700.0	8.8	-35.5			12.9	600.6	89.0	63.1	1.000003
10750.0	8.6	-35.2			12.6	600.9	89.9	63.9	1.000003
10800.0	8.4	-35.0			12.3	601.3	90.2	62.9	1.000003
10850.0	8.3	-34.7			12.1	601.6	90.5	61.9	1.000003
10900.0	8.1	-34.4			11.8	601.9	90.9	60.9	1.000003
10950.0	7.9	-34.2			11.5	602.2			1.000003
11000.0	7.7	-33.9			11.3	602.6			1.000003
11050.0	7.6	-33.7			11.0	602.9			1.000002
11100.0	7.4	-33.4			10.8	603.2			1.000002
11150.0	7.3	-33.1			10.5	603.6			1.000002
11200.0	7.1	-32.9			10.3	603.9			1.000002

STATION ALTITUDE 3997.30 FEET MSL
 12 JULY 79 0730 HRS MST
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MRN SIGNIFICANT LEVEL DATA
 1930060235
 S N R

GEODETIC COORDINATES
 32.48034 LAT DEG
 106.42307 LON DEG

GEOPOTENTIAL ALTITUDE DECAMETERS	DIRECTION DEG (TN)	WIND DATA		E-W MPS	DEW PT DEP DEG C	TEMPERATURE		PRESSURE MILLIBARS
		SPEED MPS	N-S MPS			AIR DEG C		
3404.	9999.**	9999.**	-9999.**	-9999.**	99	-32.7	7.000+0	
3155.	90.	29.	-0.	-29.	99	-37.0	1.000+1	
2976.	82.	25.	-4.	-24.	99	-43.3	1.300+1	
2804.	82.	19.	-3.	-19.	99	-46.1	1.680+1	
2688.	87.	19.	-1.	-19.	99	-45.4	2.000+1	
2602.	90.	19.	-0.	-19.	99	-49.8	2.280+1	
2423.	86.	16.	-1.	-16.	99	-51.4	3.000+1	
2256.	90.	15.	-0.	-15.	99	-52.5	3.880+1	
2093.	99.	11.	2.	-11.	99	-56.0	5.000+1	
1882.	129.	8.	5.	-8.	99	-60.9	7.000+1	
1663.	123.	2.	1.	-1.	99	-66.9	1.000+2	

** WIND DATA NOT COMPUTED DUE TO MISSING RAW AZIMUTH AND ELEVATION ANGLES.

STATION ALTITUDE 9997.30 FEET MSL
12 JULY 79 0730 HRS MST
ASCENSION NO. 235

MANDATORY LEVELS
1930000205
S M R

GEODETTIC COORDINATES
32.48034 LAT DEG
106.42307 LON DEG

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUM.	WIND DATA	
MILLIBARS	FEET	AIR DEGREES	DEWPOINT CENTIGRADE	PERCENT	DIRECTION DEGREES(TN)	SPEED KNOTS
850.0	4826.	24.2	-9	19.	9999.0	9999.0XX
800.0	6567.	25.5	-1.1	17.	9999.0	9999.0XX
750.0	8416.	22.4	-4.1	17.	221.2	5.9
700.0	10367.	18.5	-7.8	16.	159.6	5.8
650.0	12429.	13.2	-10.6	16.	119.0	6.5
600.0	14612.	7.0	-13.3	22.	105.9	7.1
550.0	16927.	-1.1	-16.5	28.	67.8	2.2
500.0	19398.	-7.0	-22.8	27.	233.6	5.3
450.0	22060.	-12.6	-29.2	23.	337.3	9.0
400.0	24981.	-18.8	-36.6	19.	4.3	22.1
350.0	28195.	-26.7	-34.3	48.	359.9	24.9
300.0	31788.	-34.8	-41.9	46.	348.9	24.0
250.0	35874.	-44.8			5.5	24.6
200.0	40639.	-57.1			12.5	30.7
175.0	43370.	-63.3			24.2	27.7
150.0	46460.	-64.5			2.7	10.0
125.0	50134.	-64.6			77.7	5.9
100.0	54567.	-66.9			123.8	3.3
80.0	59030.	-63.1			129.7	21.3
70.0	61739.	-60.9			129.7	15.8
60.0	64900.	-58.7			95.5	18.6
50.0	68681.	-56.0			99.4	21.7
40.0	73371.	-52.9			95.6	26.2
30.0	79484.	-51.4			80.4	31.0
25.0	83378.	-50.3			89.0	35.2
20.0	88193.	-45.4			87.3	37.2
15.0	94483.	-44.9			80.6	39.4
10.0	103507.	-37.0			89.8	50.1
7.0	111675.	-32.7				

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

XX WIND DATA INVALID DUE TO MISSING RAW AZIMUTH AND ELEVATION ANGLES.

STATION ALTITUDE 3997.30 FEET MSL
 12 JULY 79 0730 HRS MST
 ASCENSION NO. 235

MRIN MANDATORY LEVELS
 1930060235
 S M R

GEODETIC COORDINATES
 32.48034 LAT DEG
 106.42307 LON DEG

GEOPOTENTIAL ALTITUDE DECA METERS	DIRECTION JEG (TN)	SPEED MPS	WIND DATA N-S MPS	E-W MPS	DEW PT DEP DEG C	TEMPERATURE		PRESSURE MILLIBARS
						AIR DEG C		
3404.	9999.**	9999.**	-9999.**	-9999.**	99	-32.7		7.000+0
3155.	90.	29.	-0.	-29.	99	-37.0		1.000+1
2880.	81.	20.	-3.	-20.	99	-44.9		1.500+1
2688.	87.	19.	-1.	-19.	99	-45.4		2.000+1
2541.	89.	18.	-0.	-18.	99	-50.3		2.500+1
2423.	86.	16.	-1.	-16.	99	-51.4		3.000+1
2236.	96.	13.	1.	-13.	99	-52.9		4.000+1
2093.	99.	11.	2.	-11.	99	-56.0		5.000+1
1978.	95.	10.	1.	-10.	99	-58.7		6.000+1
1882.	130.	8.	5.	-6.	99	-60.9		7.000+1
1799.	124.	11.	6.	-9.	99	-63.1		8.000+1
1663.	124.	2.	1.	-1.	99	-66.9		1.000+2
1528.	78.	3.	-1.	-3.	99	-64.6		1.250+2
1416.	3.	5.	-5.	-0.	99	-64.5		1.500+2
1322.	24.	14.	-13.	-0.	99	-63.3		1.750+2
1239.	12.	16.	-15.	-3.	99	-57.1		2.000+2
1093.	6.	13.	-13.	-1.	99	-44.8		2.500+2
969.	349.	12.	-12.	2.	07	-34.8		3.000+2
859.	360.	13.	-13.	0.	08	-26.7		3.500+2
761.	4.	11.	-11.	-1.	18	-18.8		4.000+2
673.	337.	5.	-4.	2.	17	-12.6		4.500+2
591.	234.	3.	2.	2.	16	-7.0		5.000+2
516.	88.	1.	-0.	-1.	16	-1.		5.500+2
445.	106.	4.	1.	-4.	20	7.0		6.000+2
375.	119.	4.	3.	-1.	24	13.2		6.500+2
316.	160.	3.	2.	-1.	26	18.5		7.000+2
257.	221.	3.	2.	2.	27	22.4		7.500+2
200.	9999.**	9999.**	-9999.**	-9999.**	27	25.5		8.000+2
147.	9999.**	9999.**	-9999.**	-9999.**	25	24.2		8.500+2

** WIND DATA NOT COMPUTED DUE TO MISSING RAW AZIMUTH AND ELEVATION ANGLES.